Zentrales Hörsystem

aufsteigende Sinnesbahnen

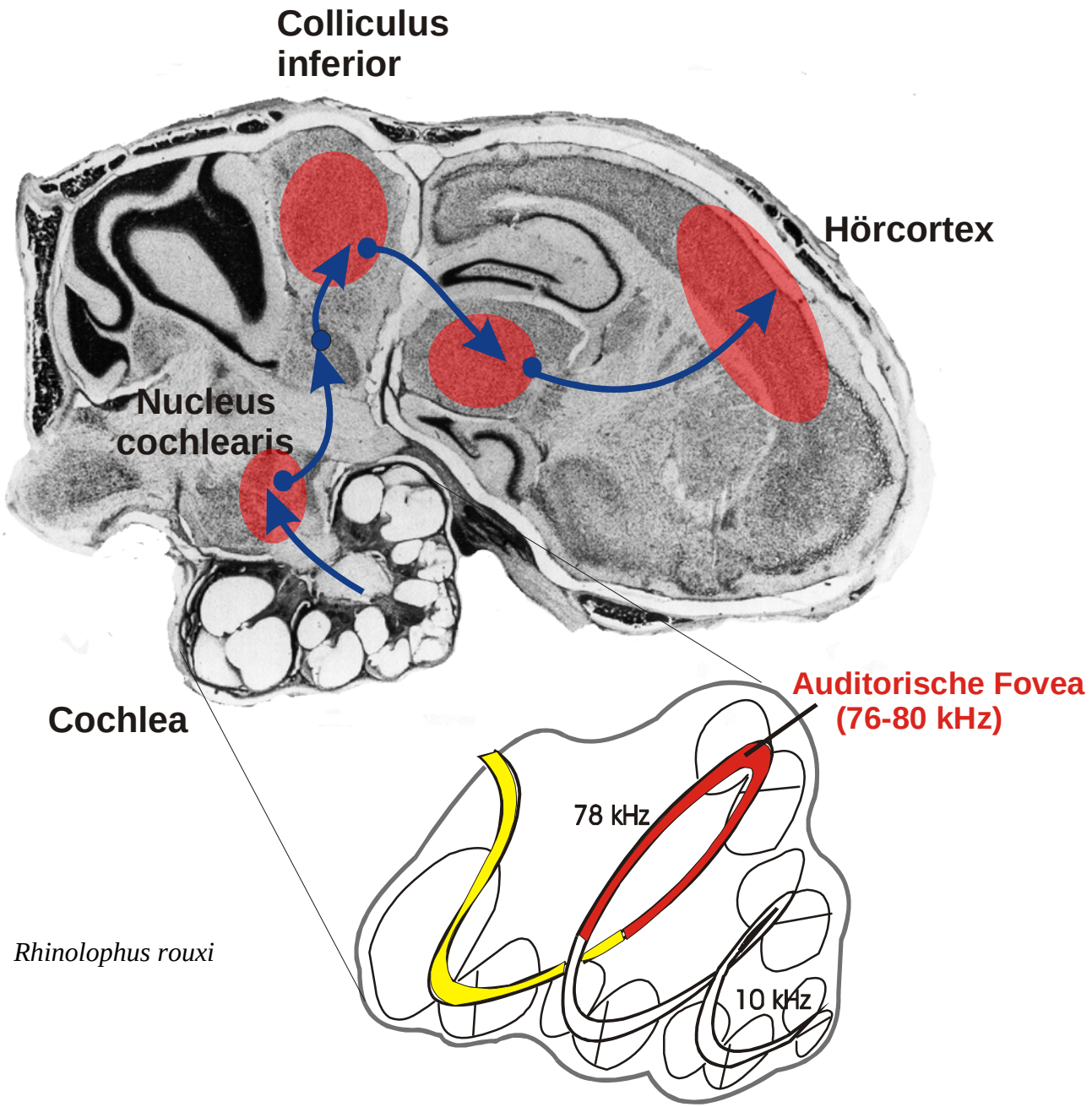
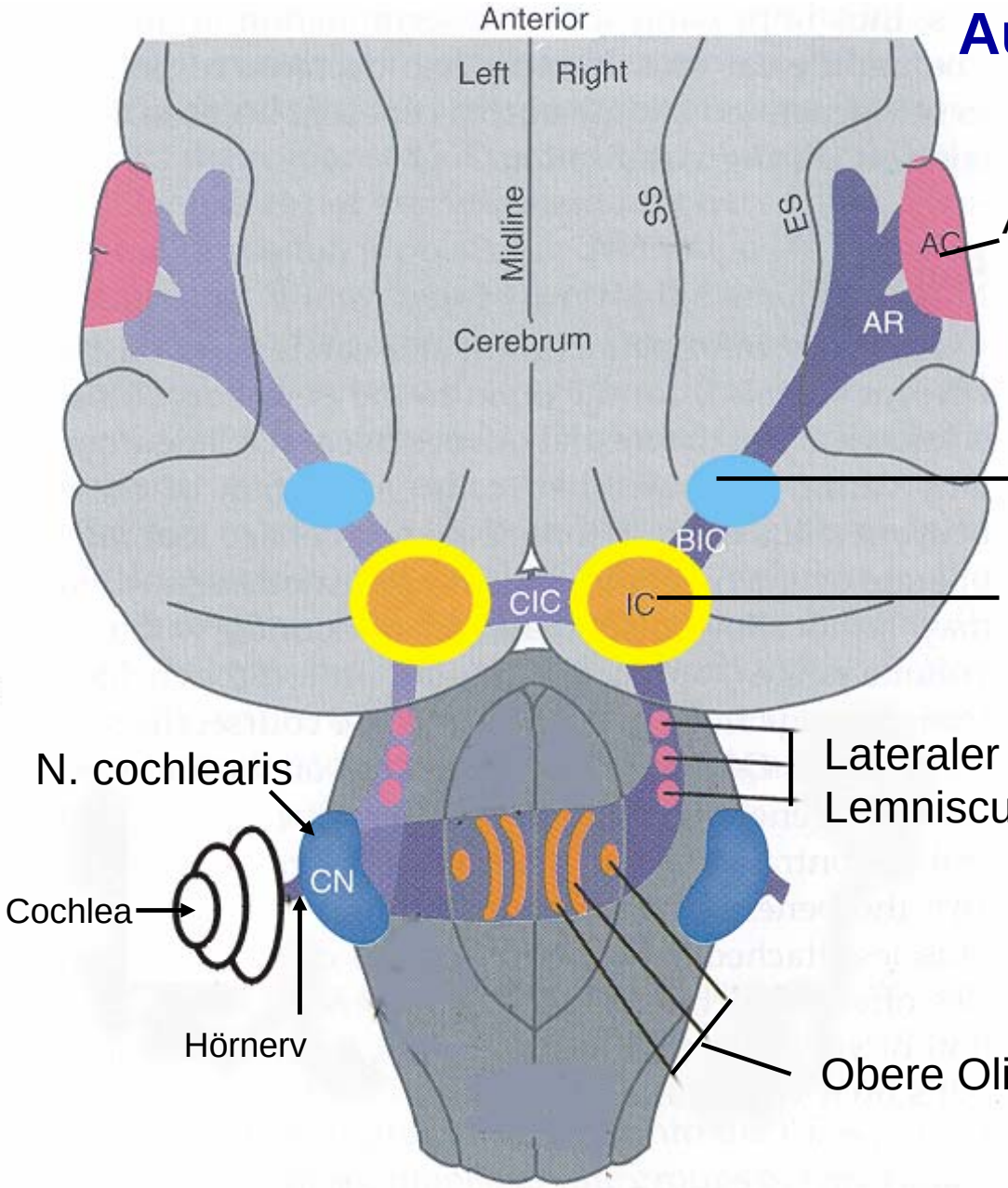


Bild: Marianne Vater, Potsdam

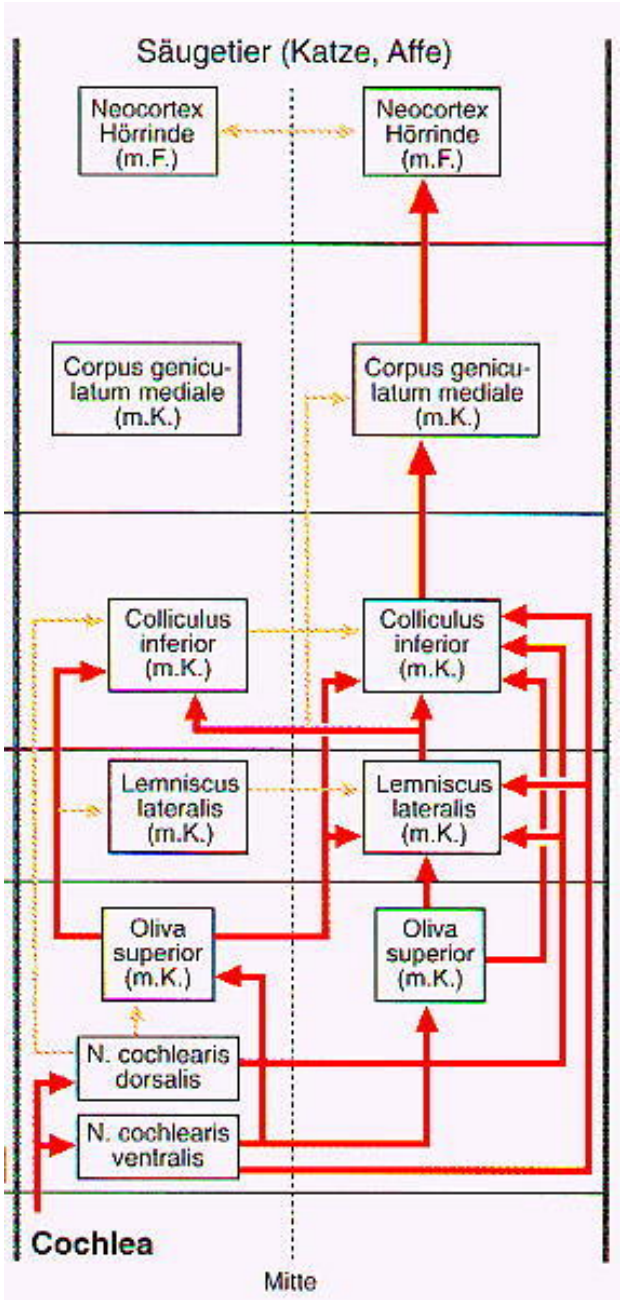
Aufsteigende Hörbahn



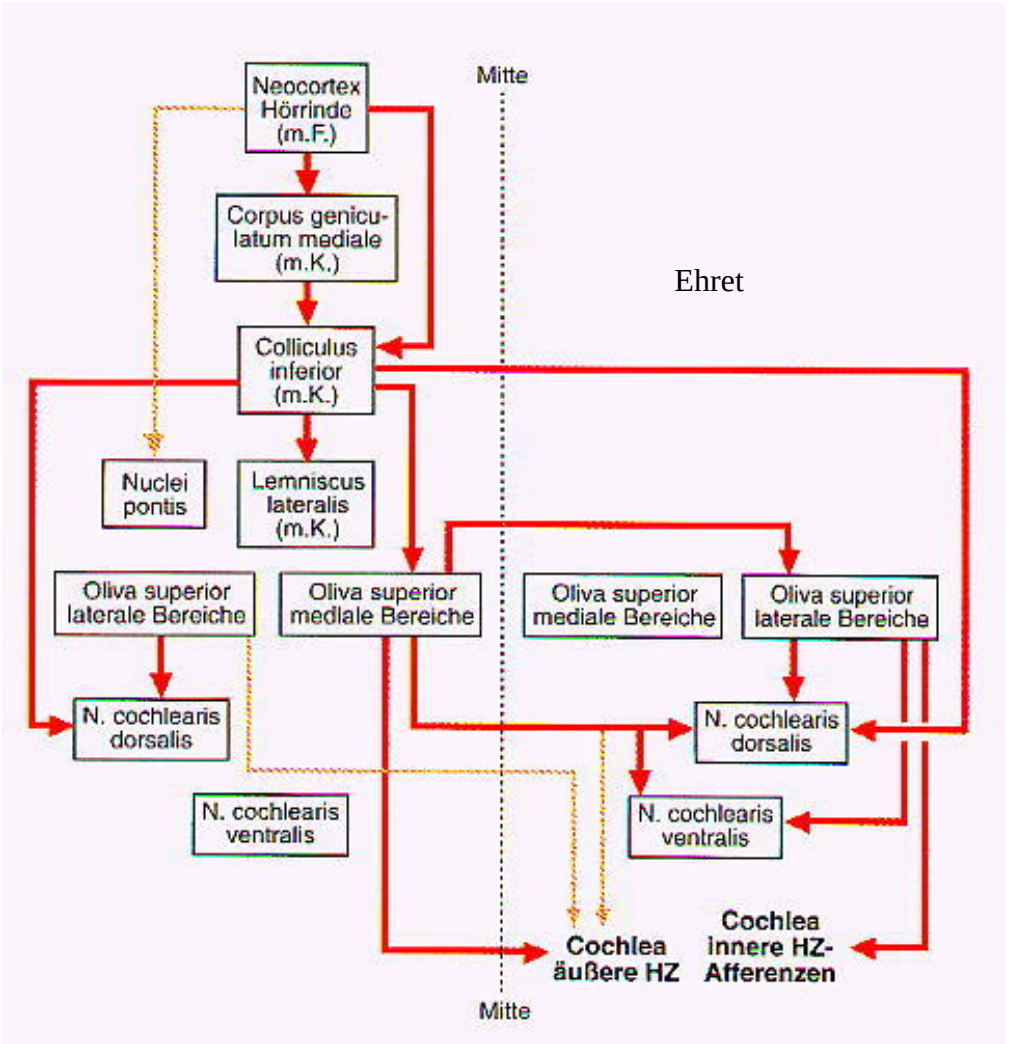
Zigmond

Auf und ab und hin und her, warum soviele Schaltstationen ?

aufsteigende Hörbahn

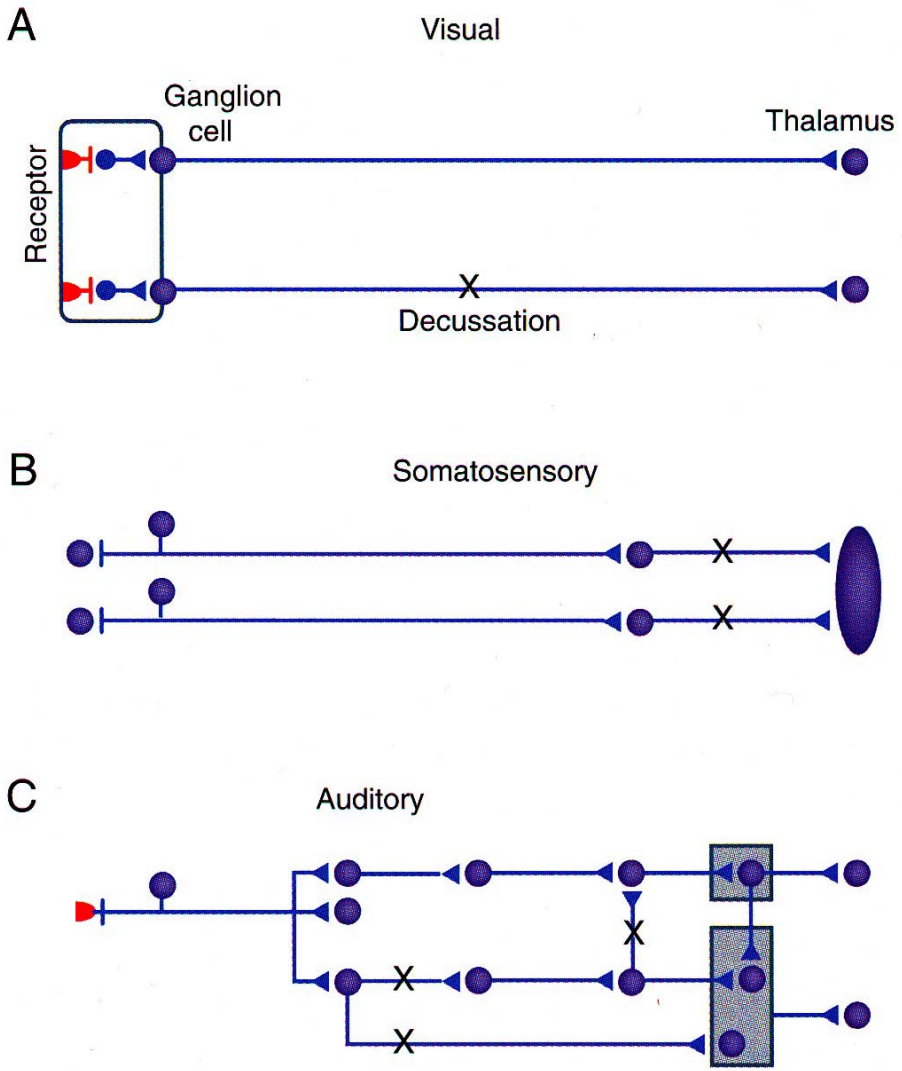


absteigende Hörbahn



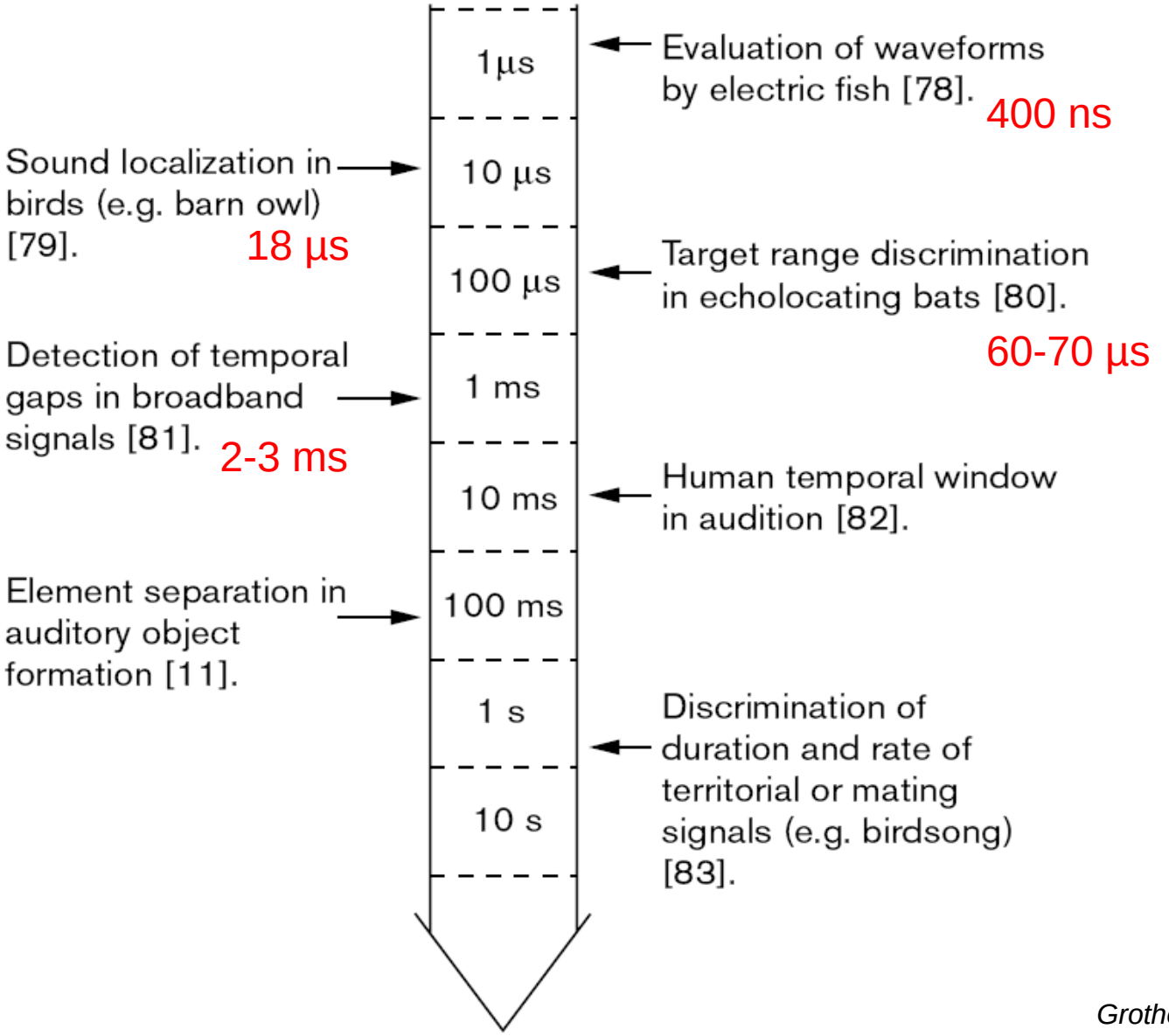
Ehret

Verschaltung von Sinnessystemen



Zigmond

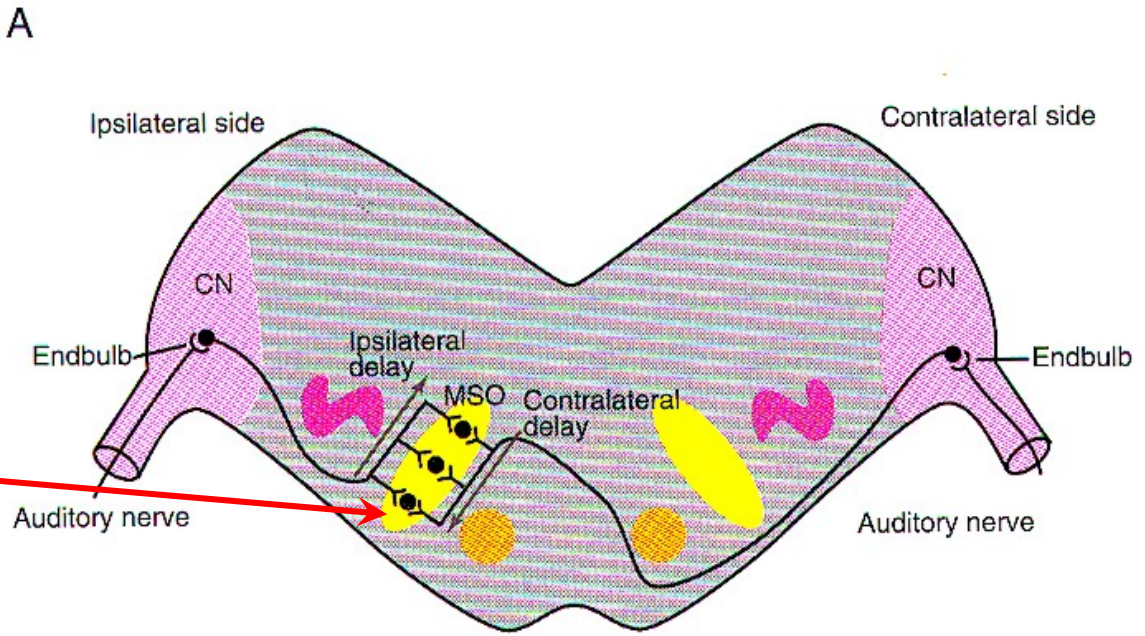
Behaviourally relevant time scales



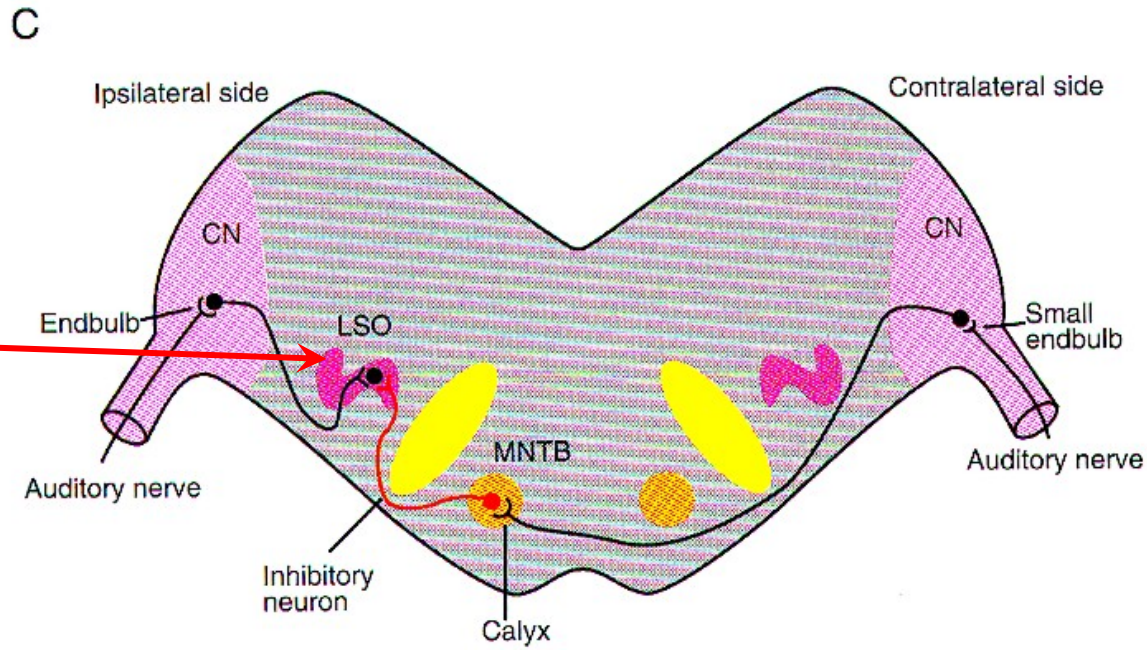
Grothe & Klump 2000

Oberer Olivenkomplex (SOC)

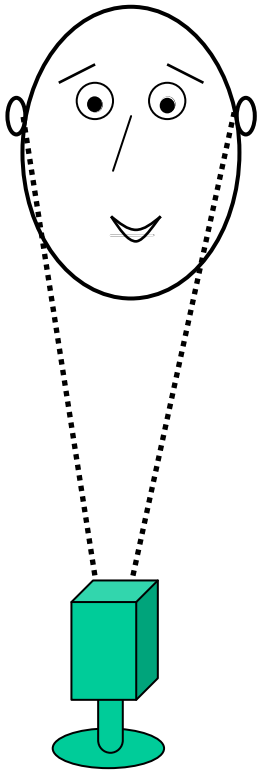
Koinzidenz-Detektoren
Schallrichtung aus Laufzeitunterschieden errechnet

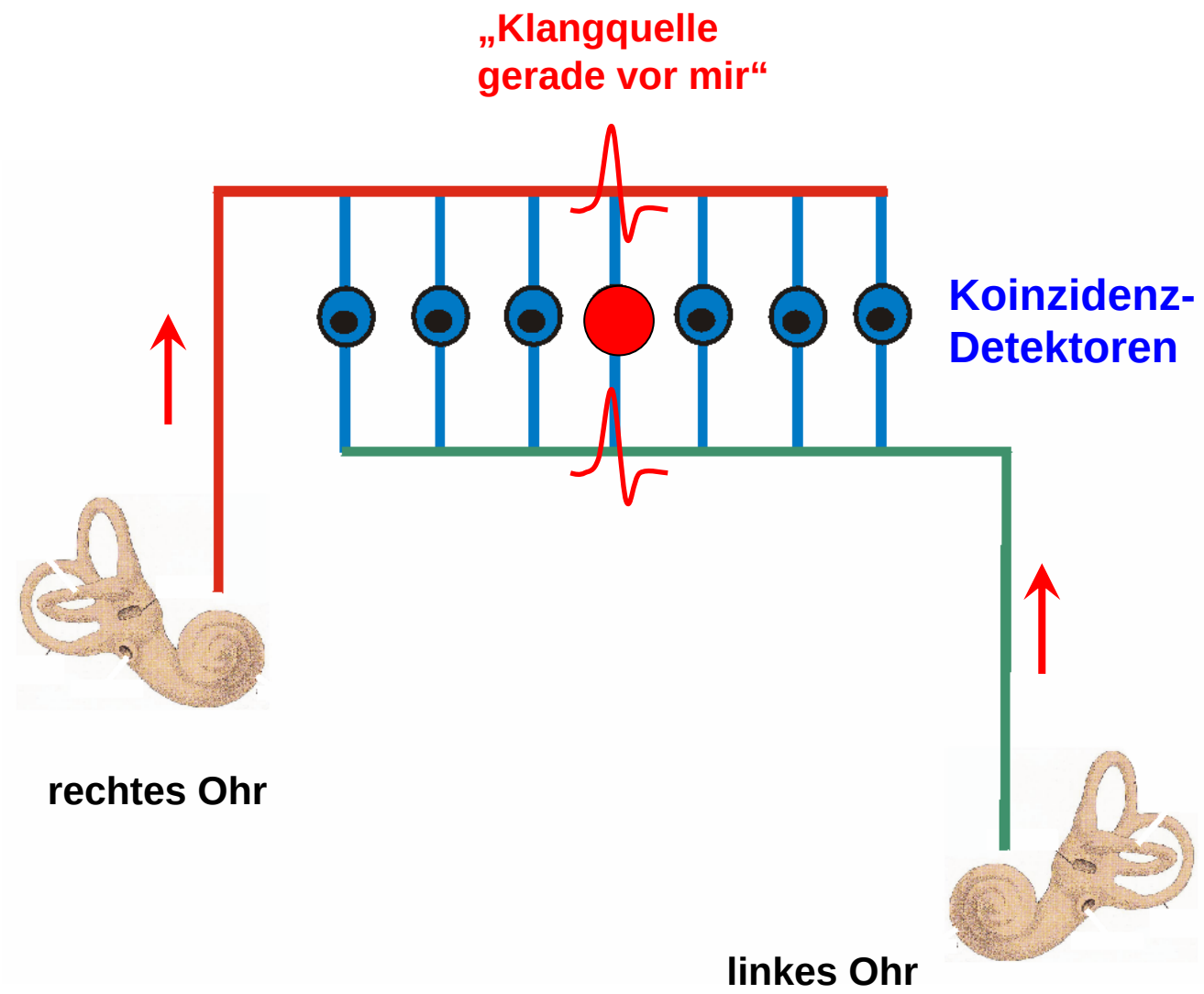


Pegeldifferenz-Detektoren
Schallrichtung aus Lautstärkeunterschieden errechnet

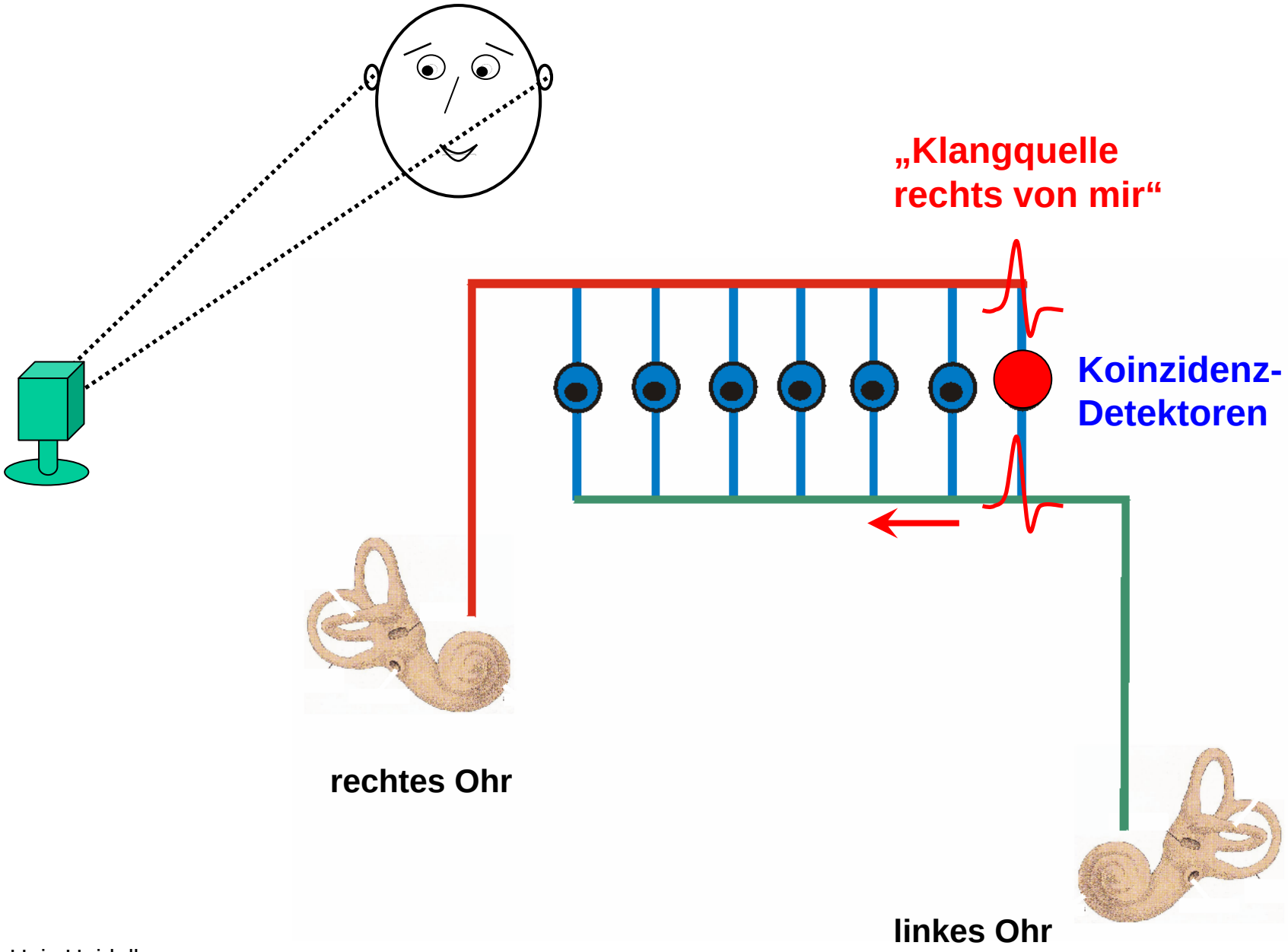


Richtungshören

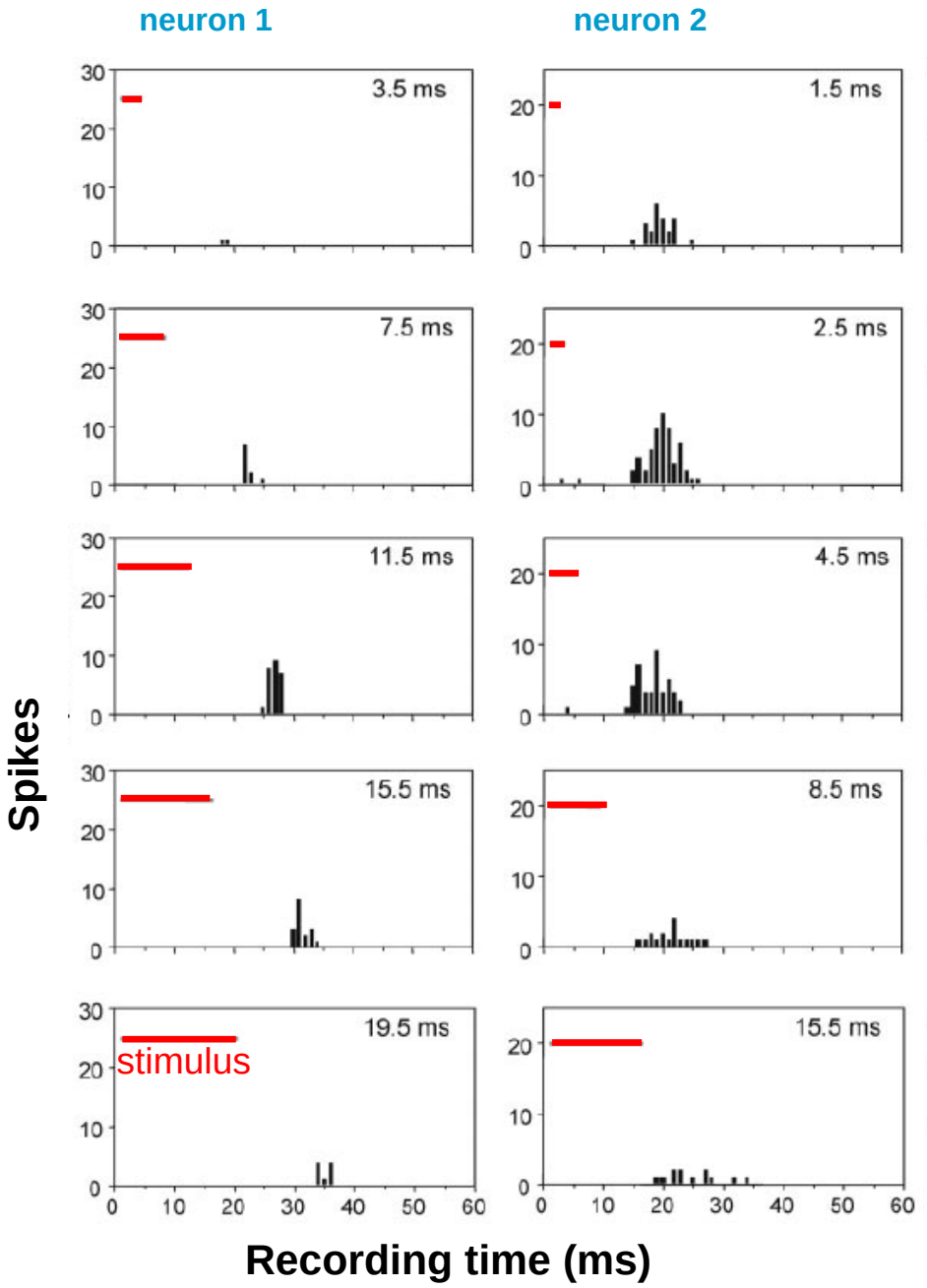


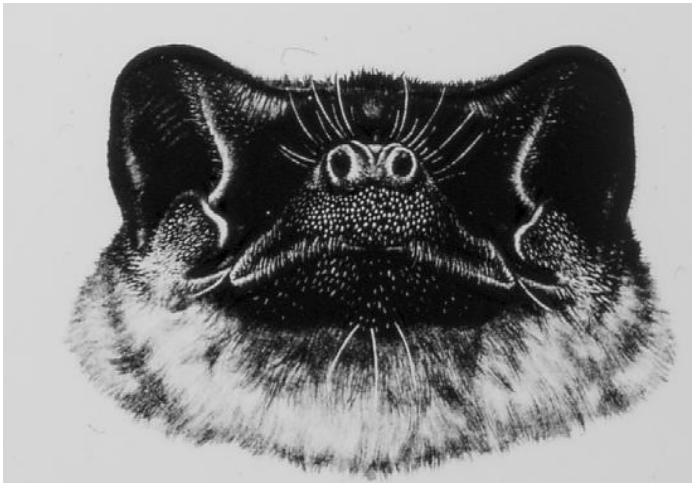


Richtungshören



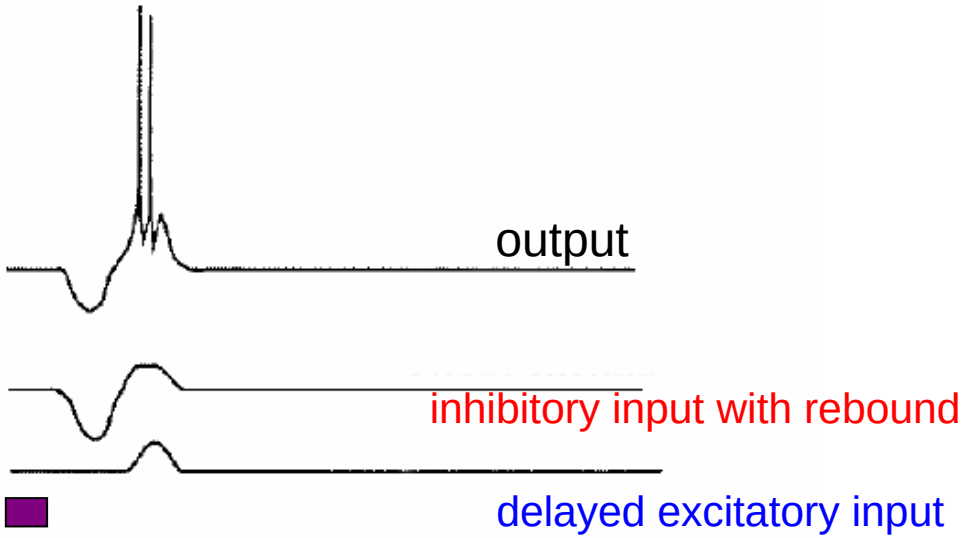
Colliculus inferior: u.a. Kodierung von Zeitdauer



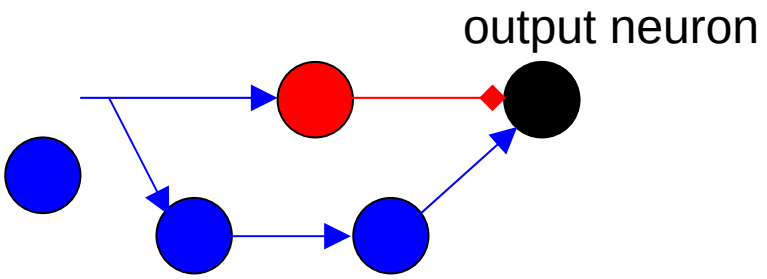


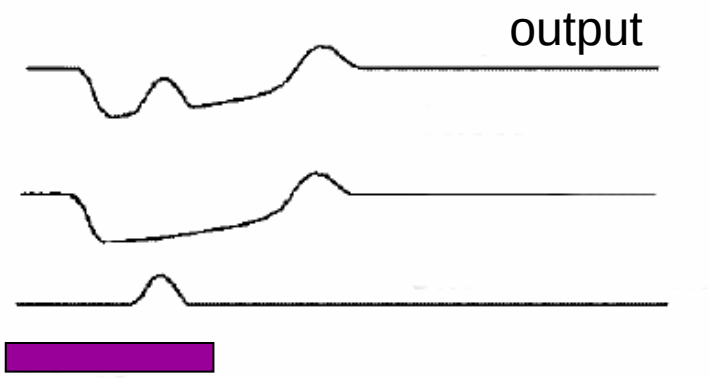
Molossus molossus

Zeitdauerkodierung („Duration tuning“) erzeugt durch verzögerte Excitation und inhibitorischen Rebound



short sound stimulus

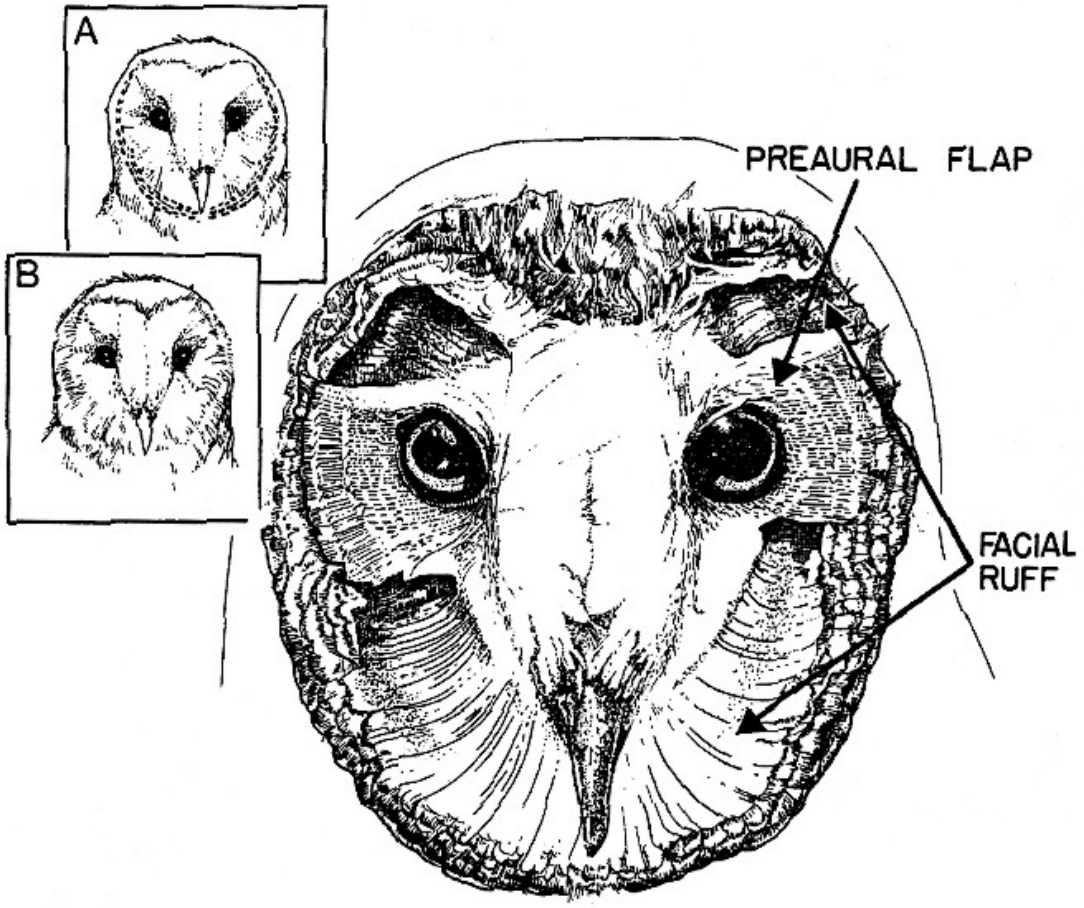




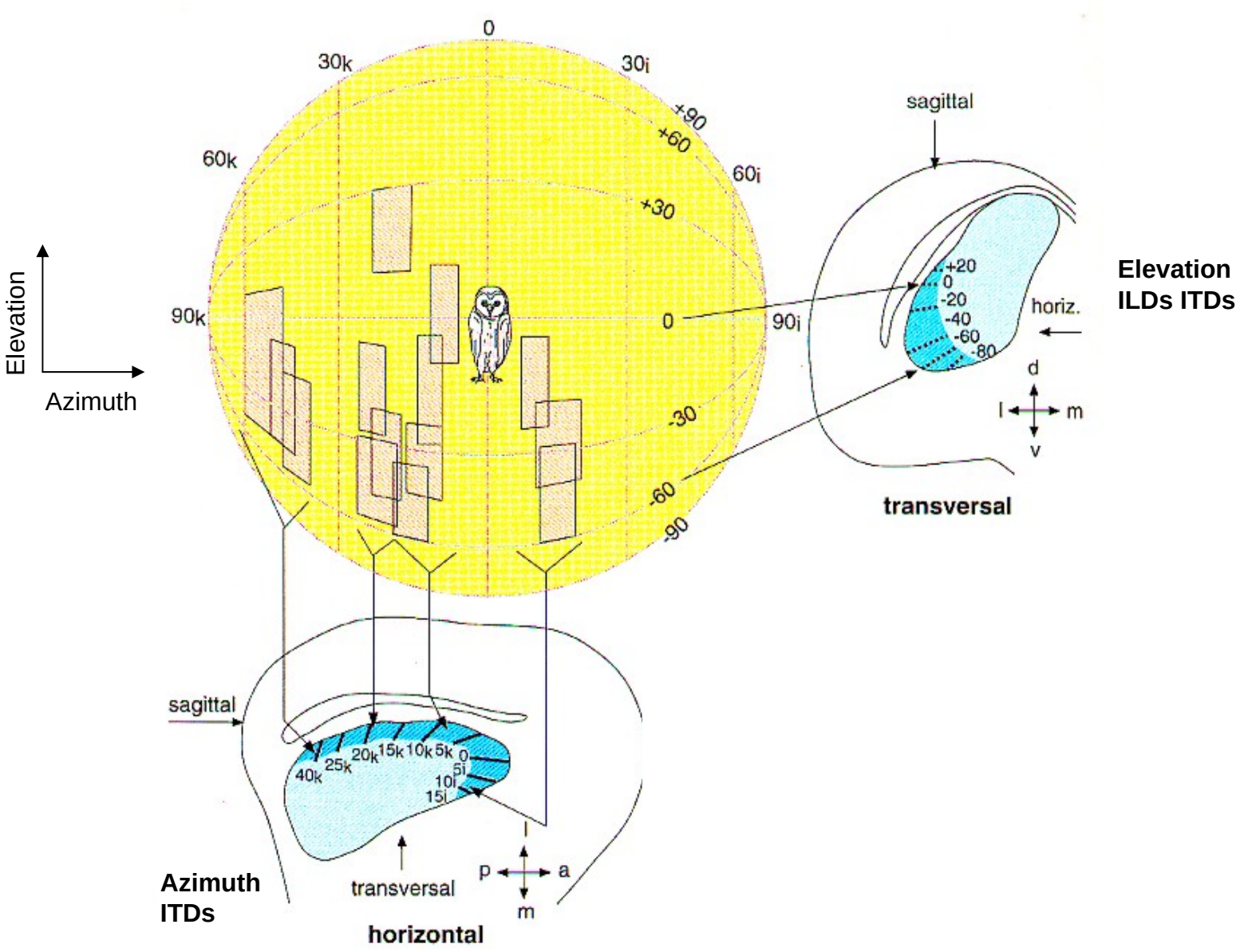
long sound stimulus

Casseday et al. 2000

Schleiereule: Vogel mit Ohrmuscheln

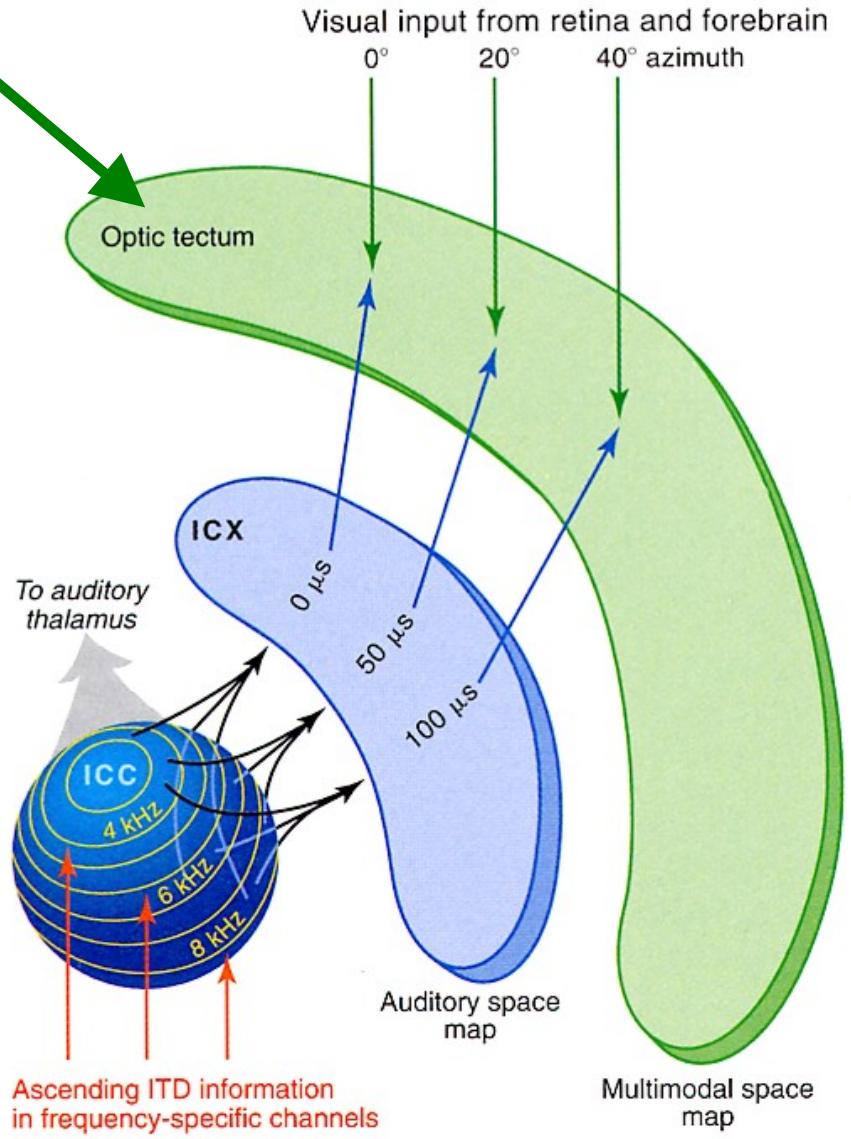


Raumabbild im colliculus inferior (ICX)



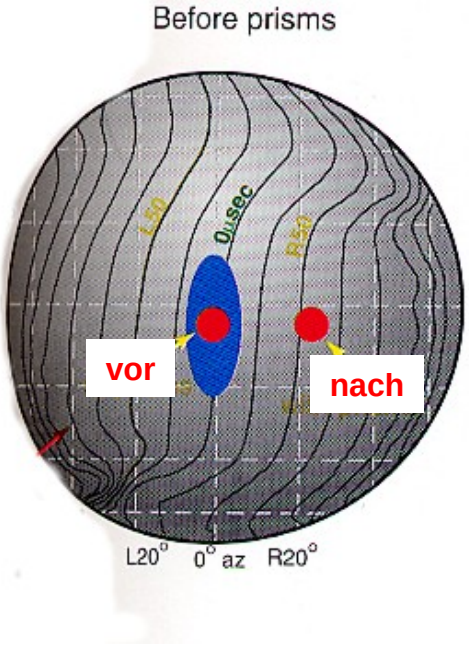
Auditorisches und visuelles Raumbild vereinen sich im Colliculus superior (optisches Tectum)

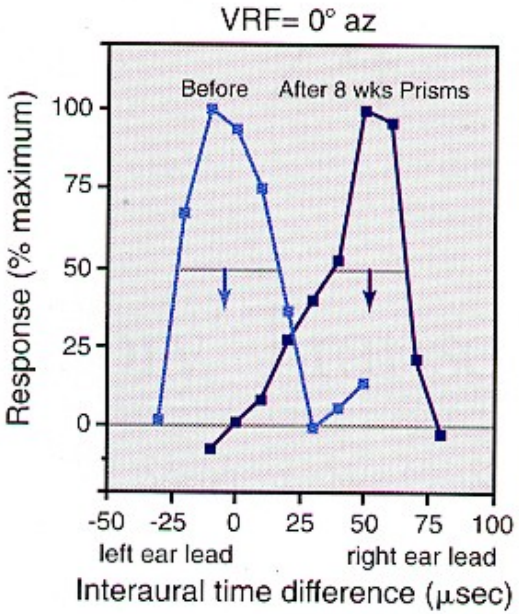
Colliculus inferior

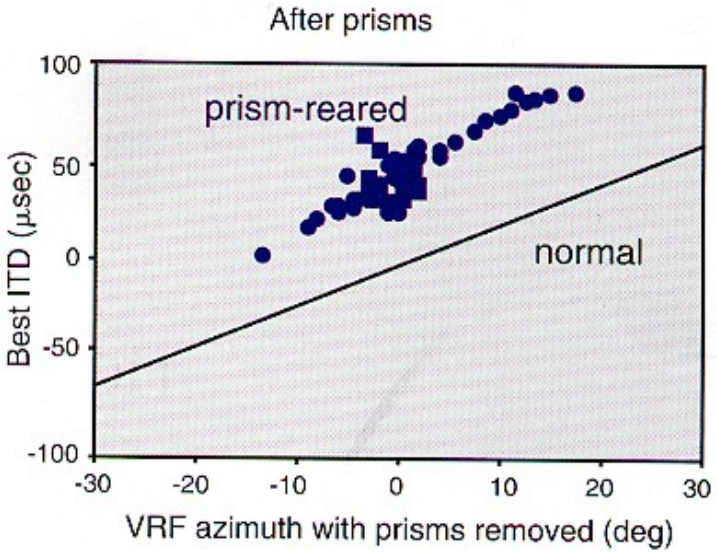


Zigmond

Neuronale Plastizität in Eulen mit verschobener visueller Karte







visuelles rezeptives Feld

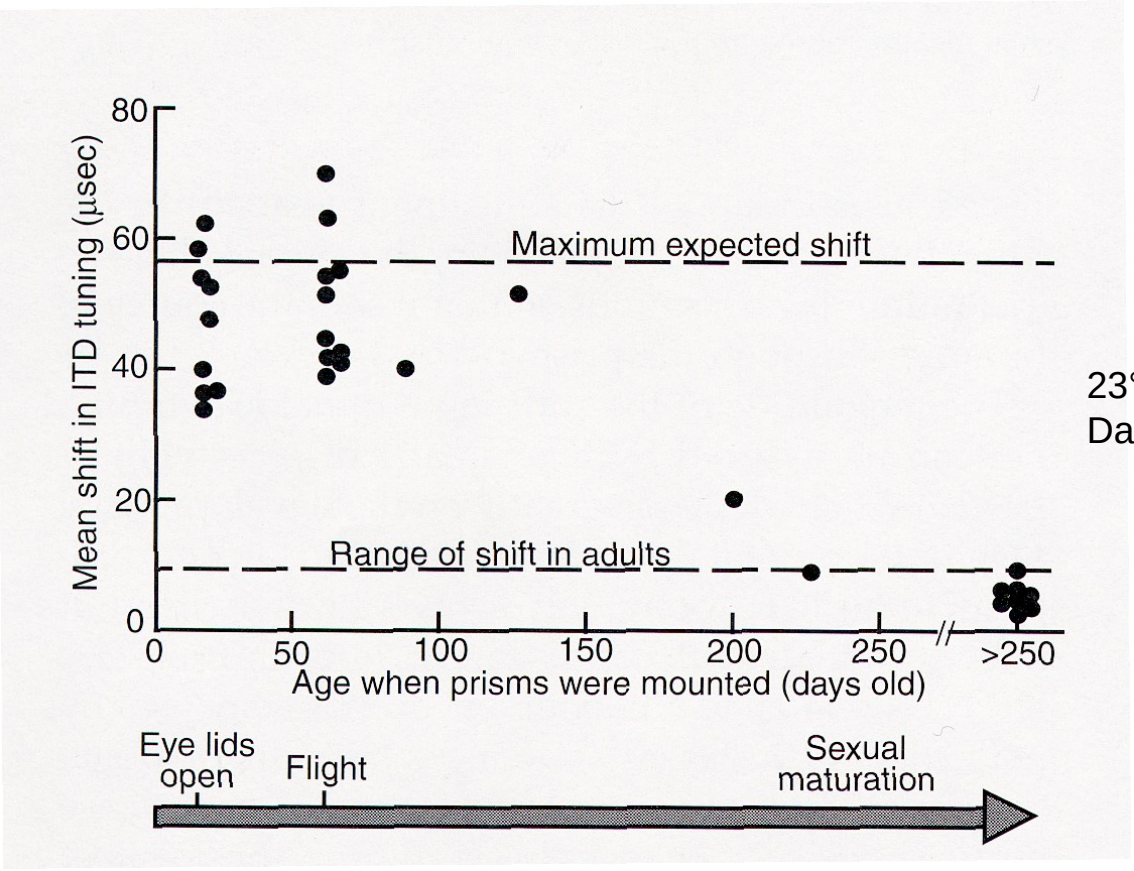
auditorisches rezeptives Feld

neuronales ITD Tuning nach 8 Wochen Prismen, gemessen an derselben Stelle im optischen Tectum

Nach Entfernen der Prismen ist ITD gegen visuelle rez. Felder verschoben

Zigmond

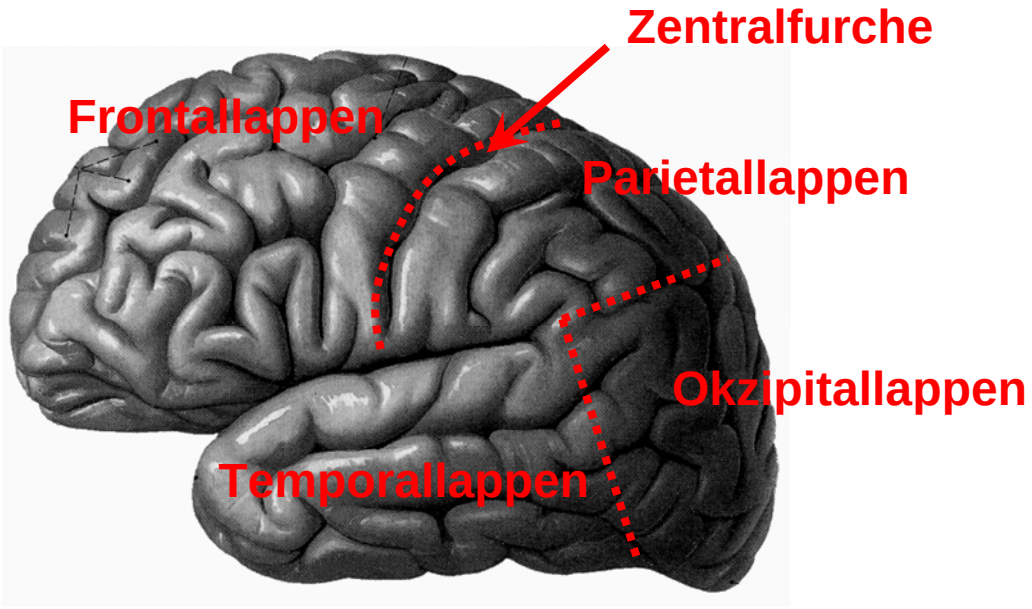
Sensitive Periode für Eulenplastizität



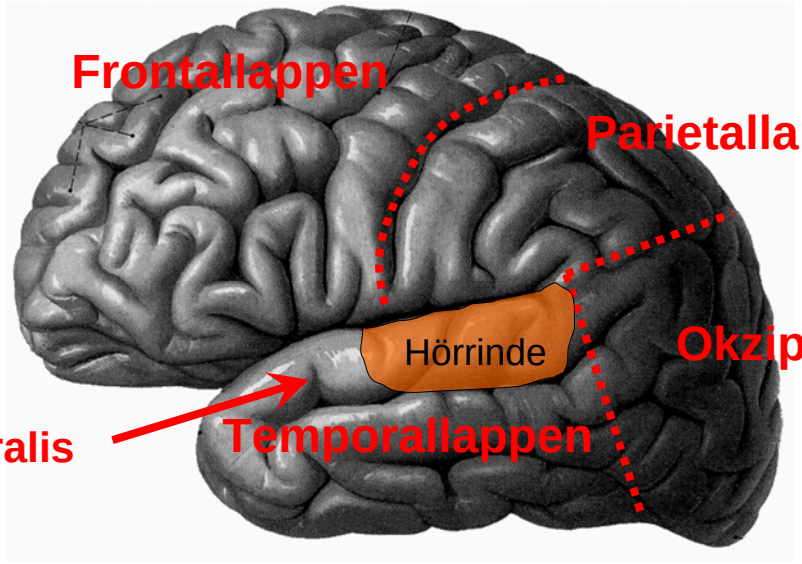
23° Verschiebung für Dauer von 60 Tagen

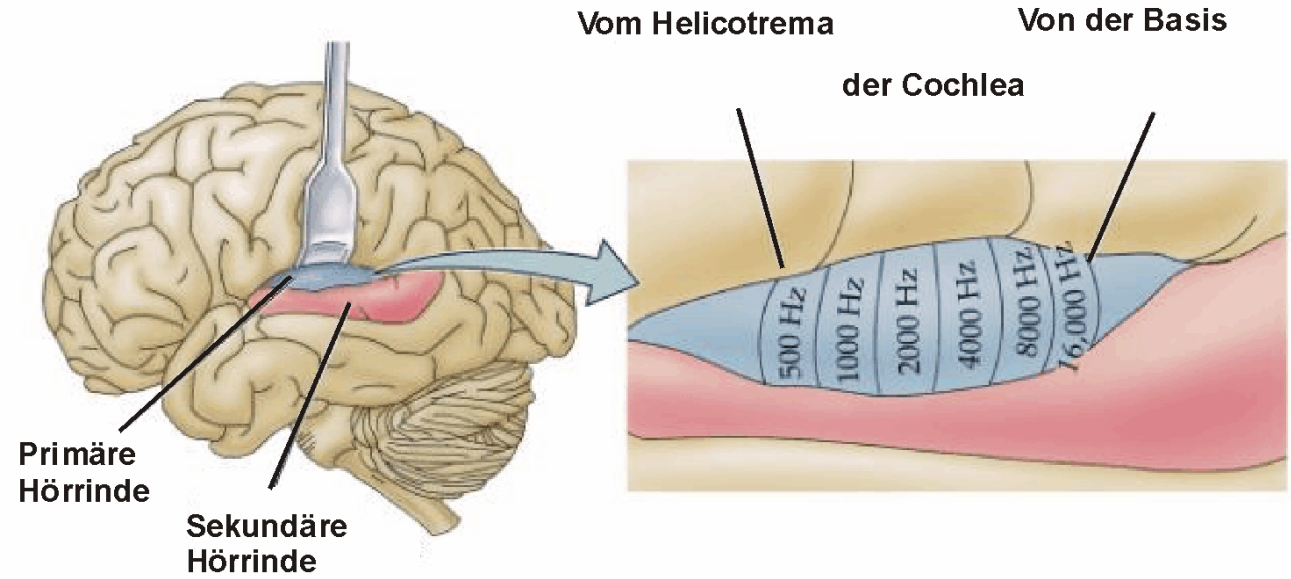
Zigmond

Auditorischer Cortex



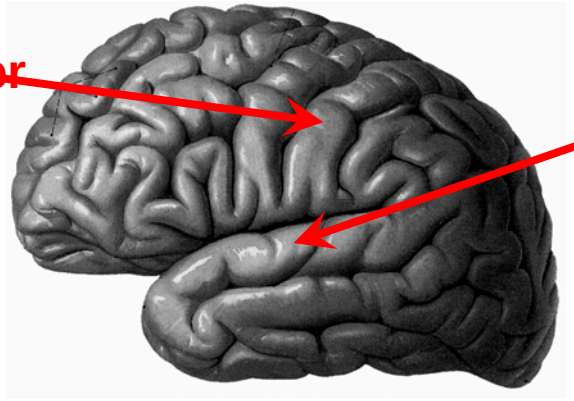
Auditorischer Cortex



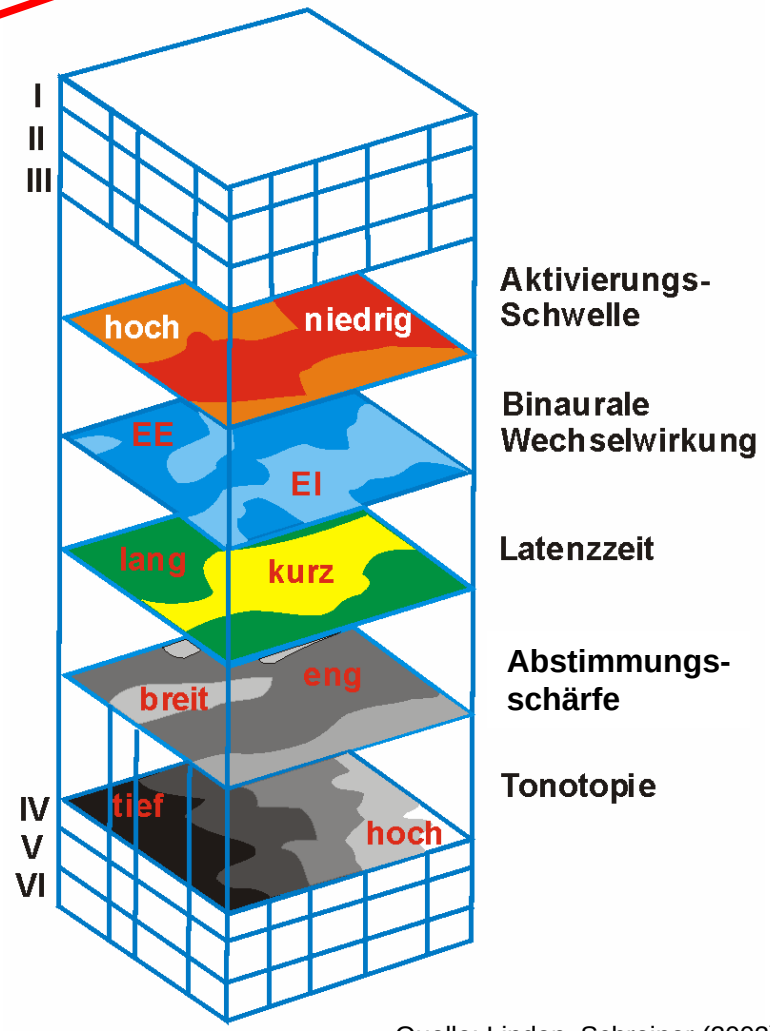


Auditorischer Cortex

somatosensorischer Cortex



auditorischer Cortex



Quelle: Kandel, Schwartz, Jessell (2000)
Principles of neural sciences
McGraw-Hill, New York

Quelle: Linden, Schreiner (2003)
Cerebral Cortex 13:83-89